

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problems Mailbox.**



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>D21H</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 98/1238</b> <b>(43) International Publication Date:</b> 26 March 1998 (26.03.98)
<b>(21) International Application Number:</b> PCT/US97/16517 <b>(22) International Filing Date:</b> 18 September 1997 (18.09.97) <b>(30) Priority Data:</b> 08/756,397 20 September 1996 (20.09.96) US <b>(71)(72) Applicant and Inventor:</b> CASAGRANDE, Charles [US/US]; 423 South Elmwood, Aurora, IL 60506 (US). <b>(74) Agent:</b> NAMMO, Laura, D.; Brinks Hofer Gilson & Lionc, NBC Tower - Suite 3600, 455 North Cityfront Plaza Drive, Chicago, IL 60611-5599 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, B BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, G GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, L LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, N PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, T TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, K LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, B KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, C DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, P SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, M MR, NE, SN, TD, TG).  <b>Published</b> <i>Without international search report and to be republish upon receipt of that report.</i>
<b>(54) Title:</b> LITE-LIFT DRY LAMINATE: FORM WITH INTEGRAL CLEAN RELEASE CARD		
<b>(57) Abstract</b>		
A form with an integrated clean release, diecut, removable card, which includes a multi-layer lamination of translucent paper or film, thin cast film, and paper.		

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

LITE-LIFT DRY LAMINATE: FORM WITH INTEGRAL CLEAN RELEASE CARDCross-References to Related Applications

This application claims the benefit of U.S. provisional application No. 60/004,641 filed  
5 September 22, 1995, for and on behalf of the inventor, Charles Casagrande.

Background of the InventionField of the Invention

This invention relates generally to an improved business form with integral clean release  
10 removable cards.

Background Information

The use of business forms with removable cards has become commonplace. Examples  
include insurance cards, membership cards, business cards and telephone cards. Such forms  
exhibit numerous beneficial characteristics including offering the sender more efficient and  
15 convenient ways to (1) imprint the form and card quickly and easily with automatic printing  
equipment; (2) imprint more information on the form than would fit on the card alone; and (3)  
handle and ship the cards.

One type of removable card is known as a coupon or clean release card. These cards,  
when removed from the form, exhibit clean surfaces on the card with no tackiness or residue on  
20 the card. Also, the adhesive area of the form, which previously retained the card is covered up in  
some way so as to be non-tacky.

Previously, clean release card and form combinations were non-integral and had the card  
"piggybacked" on the form. In these combinations, the cards utilized an additional release liner  
and were produced with a label press. The cards were then affixed to the forms in a separate  
25 step. These forms had the obvious disadvantage of requiring that the cards be produced  
separately from the forms on a different piece of equipment and then later assembled onto the  
forms.

Forms with integral cards are created by diecutting or otherwise defining the card within  
the form itself. Thus, the form becomes part of the card lamination and is therefore referred to as  
30 the form layer. This results in a card and form combination which is much thinner than the

piggyback type since the form layer actually is part of the card. However, the card must be retained within the form layer through the processes of printing, shipping, handling and other operations, until it is ultimately removed by the consumer. Currently, forms with integral clean release cards are produced using a single layer of splittable varnish or dry adhesive to retain the card within the form layer.

These products exhibit numerous problems. First, the card can be very difficult to remove since the card material is in the same plane as the form layer itself. Second, these forms can have compatibility problems with many laser printers since these products exhibit a tendency to build up static electricity and even melt when passed through such printers. At the least, such tendencies result in inconsistent release of the card from the form. Finally, the release characteristics of the cards from the form are inconsistent due to the characteristics of the splittable varnish or dry adhesive.

Reference is made to U.S. Patent Nos. 5,466,013; 5,318,326; and 4,854,610.

The present invention employs a thin cast film connected to the card which transfers to an underlying adhesive layer which is connected to a base paper layer. The transfer of the thin cast coating to the adhesive layer upon removal of the card covers the adhesive and creates a non-stick surface on the back of the card and on the area of the form which held the card. Unlike the current integral cards, the present invention also has the adhesive layer applied in a pattern coat to yield areas on the left and right sides of the card which are free from adhesive. This pattern coating creates adhesive voids on the sides of the card called "lift-edges" which provide the user with an easily obtainable grip on the card. This guarantees easy and consistent release of the card from the form. The invention exhibits excellent compatibility with laser printers such that the heat and static generated by such devices does not compromise the integrity of the invention or the consistency of the card release.

Other objects, features and advantages of the invention will be in part apparent and in part pointed out hereinafter.

### Brief Description of the Drawing

The invention is described in conjunction with the accompanying drawing, FIG. 1, which is an enlarged cross sectional view of the invention.

5

### Description of the Preferred Embodiment

Referring to the accompanying drawing, the invention is seen in cross-section as a laminate 1 attached to the bottom of a form layer 3. It is understood that the topside of layer 3 designated 19 may contain writing, graphics or other indicia.

The layers of the invention are labeled 5, 7, 9, 11, 13, and 15, and are described as follows. Layer 5 is a release liner which is removed to expose layer 7. Layer 7 is an adhesive layer which bonds laminate 1 to the underside of the form layer 3. Layer 9 is a translucent film or paper layer, the topside of which is in contact with layer 7. Layer 11 is a thin cast coating which is applied to the underside of layer 9.

Layer 13 is a second adhesive layer which bonds layer 15, the base paper layer, to the preceding layers. The card is defined in the form by a diecut 17 extending through the form layer 3 and layers 7 and 9 of the laminate 1 to but not through layer 11.

In one embodiment of the invention, layers 5, 7 and 9 are supplied as a one piece laminate, commonly referred to in the industry as "coupon base" and available from companies such as Emulsion Technologies in Medina, Ohio. Thus, the release liner, layer 5, serves to cover the adhesive layer 7 prior to the application of the coupon base to the underside of the form layer 3 at which time layer 5 is removed and laminate 1 is adhered to layer 3. Layer 9 is a translucent film or paper. Layers 11, 13 and 15 are laminated to the coupon base.

In another embodiment, the coupon base is omitted in favor of independent layers 7 and 9. Layer 9 is again composed of translucent film or paper. The layer 7 adhesive is applied to the top side of layer 9, and the balance of the inventive lamination, layers 9, 11, 13 and 15, is adhered to the bottom side of the form layer 3. Since a separate coupon base is not used, layer 5 is not used in this embodiment.

In all embodiments, the layer 11 coating has a greater affinity for the adhesive of layer 13 than the film or paper of layer 9, which enables the separation of layer 9 from layer 11 upon removal of the card with layer 11 remaining attached to layer 13.

Another aspect of the invention is that the adhesive of layer 13 may be applied in a pattern such that no adhesive is applied under the left and right edges of the card to create the lift-edges. Without adhesive under the edges of the card, the card is easier to grab and remove by the consumer. Also, the lift-edges ensure a consistent and clean release of the card.

5           Finally, in the preferred embodiment, layer 15 is paper stock, generally of 25 to 30# weight. This layer adds support for the layers above it while helping to prevent static and heat related problems. Moreover, the paper layer prevents the lamination from melting as with other integrated card laminates.

10           In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results are attained.

As various changes could be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description shall be interpreted as illustrative and not limiting.

## Claims:

1. A laminate, comprising:  
a layer of translucent paper or film;  
a card, having edges and defined in the translucent layer by a diecut extending  
5 through the translucent layer;  
a thin film layer, disposed on the translucent layer; and  
a base layer of paper adhesively secured to the thin cast film layer opposite the  
translucent layer,  
wherein the thin cast film layer has a greater affinity for the adhesive securing the  
10 thin cast film layer to the base layer than for the translucent layer.
2. A form with an integral clean release card, comprising  
a form layer having upper and lower surfaces;  
a translucent paper or film layer, secured to the lower surface of the form layer by  
15 a first layer of adhesive;  
a card, having edges and defined in the form, first adhesive, and translucent layers  
by a diecut extending through the form, first adhesive and translucent layers;  
a thin cast film layer, disposed on the translucent layer opposite the form layer,  
having a greater affinity for a second adhesive layer than the translucent layer; and  
20 a base layer of paper secured to the thin cast film layer opposite the translucent  
layer by the second adhesive layer.
3. An article, as in claims 1 or 2, wherein the second adhesive layer is applied in a  
pattern such that it does not extend under the left and right edges of the card.  
25
4. An article, as in claims 1 or 2, wherein the translucent layer is a polyester film, 0.5  
to 7 mils thick.

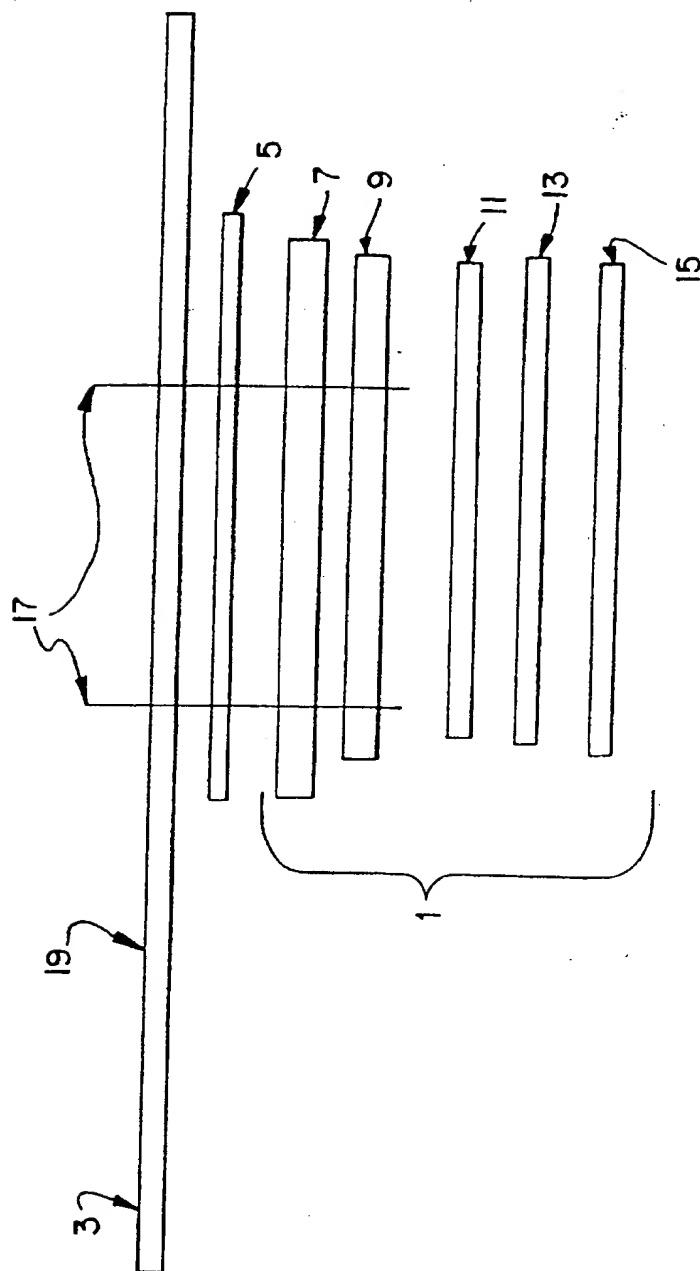


5. An article, as in claims 1 or 2, wherein the base layer of paper is paper stock of 25 to 30# weight.

SUBSTITUTE SHEET (RULE 26)

1/1

FIG. 1

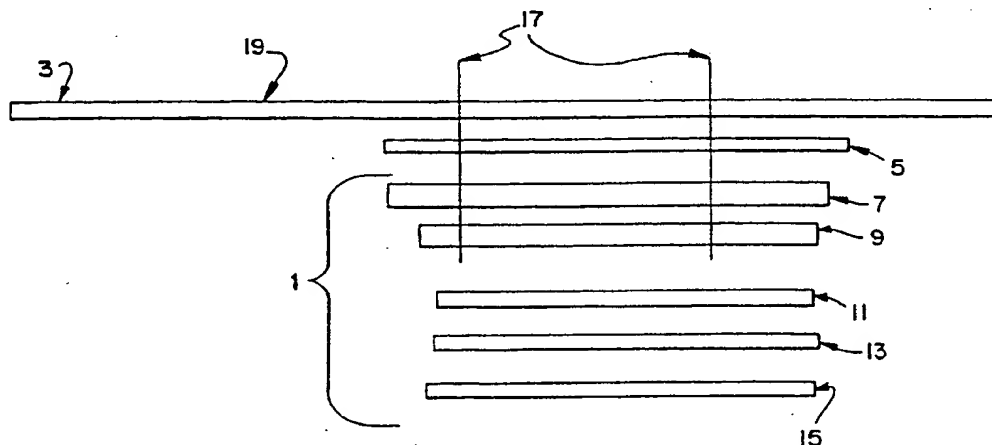




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>B42D 15/00</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/12383</b> <b>(43) International Publication Date:</b> 26 March 1998 (26.03.98)
<b>(21) International Application Number:</b> PCT/US97/16517 <b>(22) International Filing Date:</b> 18 September 1997 (18.09.97) <b>(30) Priority Data:</b> 08/756,397      20 September 1996 (20.09.96)      US <b>(71)(72) Applicant and Inventor:</b> CASAGRANDE, Charles [US/US]; 423 South Elmwood, Aurora, IL 60506 (US). <b>(74) Agent:</b> NAMMO, Laura, D.; Brinks Hofer Gilson & Lione, NBC Tower - Suite 3600, 455 North Cityfront Plaza Drive, Chicago, IL 60611-5599 (US).		<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  <b>(88) Date of publication of the international search report:</b> 30 April 1998 (30.04.98)

**(54) Title:** LITE-LIFT DRY LAMINATE: FORM WITH INTEGRAL CLEAN RELEASE CARD

**(57) Abstract**

A form with an integrated clean release, diecut, removable card, which includes a multi-layer lamination of translucent paper or film (9), thin cast film (11), and paper (15).

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/16517

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :B42D 15/00

US CL :283/110, 107

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 283/079, 080, 081, 101, 105

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,854,610 A (KWIATEK) 08 AUGUST 1989, SEE ENTIRE DOCUMENT	1-5
A	US 5,318,326 A (GARRISON) 07 JUNE 1994, SEE ENTIRE DOCUMENT	1-5
A	US 5,362,106 A (LONGTIN) 08 NOVEMBER 1994, SEE ENTIRE DOCUMENT	1-5
A	US 5,466,013 A (GARRISON) 14 NOVEMBER 1995, SEE ENTIRE DOCUMENT	1-5

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*B* earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z* document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

26 FEBRUARY 1998

Date of mailing of the international search report

16 MAR 1998

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

WILLMON FRIDIE, JR.

Telephone No. (703) 308-1866

*Sheila Vency*  
Paralegal Specialist  
Group 3200